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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,102	02/13/2004	Sun Jin Yun	123056-05004443	4540
43569	7590	02/10/2006	EXAMINER	
MAYER, BROWN, ROWE & MAW LLP 1909 K STREET, N.W. WASHINGTON, DC 20006			DIAZ, JOSE R	
			ART UNIT	PAPER NUMBER
			2815	

DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/777,102

Applicant(s)

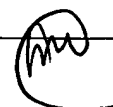
YUN ET AL.

Examiner

José R. Díaz

Art Unit

2815



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 7-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/13/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Group I (claims 1-6) in the reply filed on January 19, 2006 is acknowledged. The traversal is on the ground(s) that the groups of claims are closely related to each other and define a single invention, and therefore, it would not be unduly burdensome for the examiner to examine the claims. This is not found persuasive because the invention of Group II, claims 7-12 are related to a method of making a semiconductor device as classified in 438, while the invention of Group I is a semiconductor device as classified in 257. They are shown to be different inventions and having a separate status in the art by their different classifications. The requirement is still deemed proper and is therefore made FINAL.

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### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Buchwalter et al. (US Pat. No. 6,184,121 B1).

Regarding claim 1, Buchwalter et al. teaches a substrate with a microstructure formed thereon, the substrate comprising:

a temporary substrate (10) supporting an upper substrate (120) on which a device is formed at a process of manufacturing the device, and removed from the upper substrate after the process [see fig. 4C. With regards to the limitation about forming and removing a device from the upper substrate, it is noted that this limitation contains method of process of making characteristics; therefore given no patentable weight in determining patentability of the final device structure. Note that a "product by process" claim is directed to the product per se, no matter how actually made, *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear].

a buffer layer (consider the structure comprising layers 20, 30, 60, 70) formed on an upper surface of the temporary substrate (10) to have a plurality of shapes (consider the shapes of wiring 60 and 70 and/or the patterned layers 20 and 30) with air gaps (110) spaced apart from each other at regular intervals [see fig. 4C]; and

an adhesive layer (consider layer 100 and the adhesive coating described in col. 7, lines 26-27] formed on the buffer layer (consider the structure comprising layers 20,

30, 60, 70) so that the upper substrate is adhered to an upper surface of the adhesive layer [see fig. 4C].

Regarding claim 2, Buchwalter et al. teaches that the temporary substrate is made of at least Si [see col. 6, lines 16-17 and col. 11, lines 1-2].

Regarding claim 3, Buchwalter et al. teaches the buffer layer is made of at least one of SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, AlON, SiON, Si<sub>3</sub>N<sub>4</sub>, AlN, SOG (spin-on-glass), photosensitive material, Cu, Cu alloy, Al, and Al alloy [ see col. 6, lines 20-26 and 36-39 and col. 7, lines 60-65].

Regarding claim 4, Buchwalter et al. teaches the buffer layer (consider the shapes of wiring traces 60 and 70 and/or the patterned layers 20 and 30) is patterned and etched to form a plurality of shapes arranged in many rows with air gaps (110) being spaced apart from each other at regular intervals [see fig. 4C].

Regarding claim 5, Buchwalter et al. teaches the adhesive layer (consider layer 100 and the adhesive coating described in col. 7, lines 26-27] is made of an organic film [for example, layer 100 is made of a polymer such as Parylene. See col. 7, lines 20-21], to withstand a hot process of more than 100 °C [please note that anneal treatment at a temperature of at least 400 °C can be applied after the formation of the adhesive layer 130. See col. 8, lines 57-64].

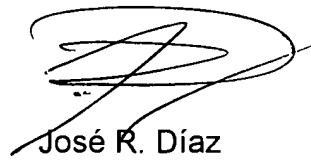
Regarding claim 6, Buchwalter et al. teaches that the upper substrate (120) is made of glass (polyimide) [see col. 7, lines 26-28].

***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to José R. Díaz whose telephone number is (571) 272-1727. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to be 'J. R. Diaz', with a large, stylized flourish extending from the end of the signature.

José R. Díaz  
Examiner  
Art Unit 2815